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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,750	08/24/2001	Masanobu Fukuda	011078	9929

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ARMSTRONG, WESTERMAN & HATTORI, LLP  
1725 K STREET, NW  
SUITE 1000  
WASHINGTON, DC 20006

EXAMINER

MCPHERSON, JOHN A

ART UNIT PAPER NUMBER

1756

DATE MAILED: 09/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/935,750

Applicant(s)

FUKUDA ET AL

Examiner

John A. McPherson

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2001 and 15 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 3, 5, 6 and 9 each recites the limitation "the photo dimerization reaction" in lines 3-4 (claims 1 and 3), line 4 (claims 5 and 6) or lines 7-8 (claim 9). There is insufficient antecedent basis for this limitation in the claim. This rejection could be overcome by changing "the" photo dimerization reaction to --a-- photo dimerization reaction.

Claims 2, 4, 7, 8 and 10 each recite the limitation "these 2 to 5 groups" in line 7. There is insufficient antecedent basis for this limitation in these claims.

Claims 5 and 6 each recite the limitation "the structural unit" in line 7 (claim 5) or line 9 (claim 6). There is insufficient antecedent basis for this limitation in the claim. This rejection could be overcome by replacing "the structural unit" with --the photo-alignment moiety--.

Claim 6 recites the limitation "the thermal polymerization reaction" in lines 6-7. There is insufficient antecedent basis for this limitation in the claim. This rejection could be overcome by replacing "the" thermal polymerization reaction with --a-- thermal polymerization reaction.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 00/10974 (WO '974). WO '974 discloses a radiation curable composition comprising a photopolymerizable monomer comprising a benzophenone moiety and two polymerizable maleimide groups. See page 35, line 17 to page 36, line 4 and page 37, line 21 to page 39, line 22.

***Pertinent Prior Art***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

JP 2001-122981 discloses a liquid crystal orienting membrane obtained by irradiating a maleimide compound having an aromatic ring and plural maleimide groups with anisotropic light.

WO 01/38931 discloses a liquid crystal display comprising an alignment film obtained from a compound having maleimide groups or groups derived therefrom which crosslinks by the action of heat or light.

***Allowable Subject Matter***

4. Claims 3-10 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action because in a photoalignment layer comprising a polymer of a polymerizable monomer having at least one photo-alignment moiety and at least two polymerizable maleimide groups per molecule, the photo alignment layer having a crosslinked structure formed by polymerization of the polymerizable maleimide groups, the prior art does not teach or suggest the photo-alignment layer wherein the photo-alignment moiety carries out a photo-alignment function by a photo dimerization reaction.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. McPherson whose telephone number is (703) 308-2302. The examiner can normally be reached on Monday through Friday, 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on (703) 308-2464. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



John A. McPherson  
Primary Examiner  
Art Unit 1756

JAM  
8/22/03